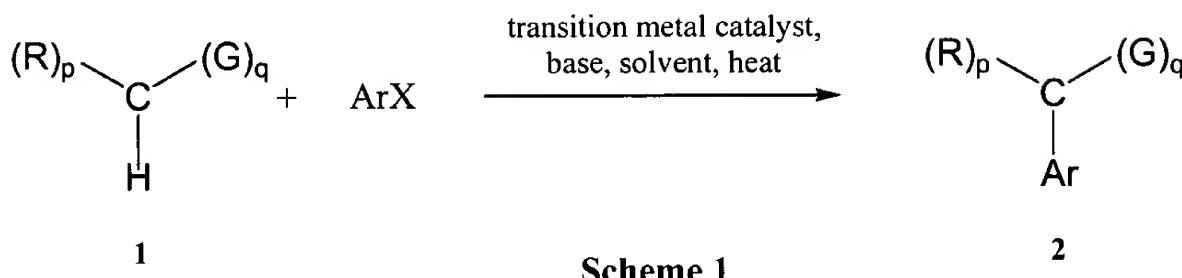


Claims

1. (previously presented) A method represented by Scheme 1:



wherein

G represents, independently for each occurrence, an electron withdrawing group selected from the group consisting of formyl, acyl, -C(O)OR, -C(O)NR₂, nitro, nitroso, -S(O)₂R, -SO₃R, -S(O)₂NR₂, -C(NR)-R, -C(NOR)-R, and -C(NNR₂)-R;

R represents, independently for each occurrence, hydrogen, alkyl, aryl, heteroalkyl, heteroaryl, halogen, alkylamino, arylamino, alkylthio, arylthio, alkoxy, aryloxy, or -(CH₂)_m-R₈;

Ar represents an aromatic or heteroaromatic moiety;

X represents halogen, -OTf, -ONf, -OTS, -OMs, (alkyl)S(O)₂O-, or (aryl)S(O)₂O-;

the transition metal catalyst consists essentially of a Group VIIA metal and one to four inclusive non-chelating ligands selected from the group consisting of OAc, Cl, CH₃CN, triphenylphosphine, tri(o-tolyl)phosphine, trimethylphosphine, triethylphosphine, tripropylphosphine, triisopropylphosphine, tributylphosphine, tricyclohexylphosphine, trimethyl phosphite, triethyl phosphite, tripropyl phosphite, triisopropyl phosphite, tributyl phosphite and tricyclohexyl phosphite;

base represents a Bronsted base;

R₈ represents independently for each occurrence a substituted or unsubstituted aryl, cycloalkyl, cycloalkenyl, heterocycle or polycycle;

m, independently for each occurrence, is an integer selected from the range 0 to 8 inclusive;

q is an integer selected from the range 1 to 3 inclusive; and

p is an integer equal to (3-q).

Claim 2 **(canceled)**

3. **(previously presented)** The method of claim 1, wherein said at least one non-chelating ligand is an asymmetric ligand; and the reaction produces a non-racemic mixture of a chiral compound 2.

4. **(previously presented)** The method of claim 1, wherein the Group VIIA metal is palladium, platinum, or nickel.

5. **(previously presented)** The method of claim 4, wherein the Group VIIA metal is palladium.

Claims 6-7 **(canceled)**

8. **(original)** The method of claim 1, wherein R represents, independently for each occurrence, hydrogen, alkyl, aryl, heteroalkyl, heteroaryl, or -(CH₂)_m-R₈.

9. **(original)** The method of claim 1, wherein X represents Br, I, -OTf, -ONf, -OTs, or -OMs.

10. **(currently amended)** The method of claim 1, ~~2~~, 3, 4, 5, 6, ~~7~~, 8, or 9, wherein X represents Br, I, -OTf, or -ONf.

11. **(original)** The method of claim 10, wherein the base is an alkoxide, carbonate, or an amide.

12. **(original)** The method of claim 11, wherein the base is a salt of tert-butoxide, dialkylamide, or bis(trialkylsilyl)amide.

13. **(original)** The method of claim 12, wherein the base is lithium, sodium, or potassium tert-butoxide.

14. **(original)** The method of claim 13, wherein the base is sodium tert-butoxide.

15. (original) The method of claim 10, wherein the solvent is a non-polar, aprotic solvent.
16. (original) The method of claim 14, wherein the solvent is a non-polar, aprotic solvent.
17. (original) The method of claim 15, wherein the solvent is a hydrocarbon.
18. (original) The method of claim 16, wherein the solvent is a hydrocarbon.
19. (original) The method of claim 17, wherein the solvent is an aromatic hydrocarbon.
20. (original) The method of claim 18, wherein the solvent is an aromatic hydrocarbon.
21. (original) The method of claim 19, wherein the solvent is toluene.
22. (original) The method of claim 20, wherein the solvent is toluene.
23. (original) The method of claim 1, wherein q equals 1.
24. (original) The method of claim 22, wherein q equals 1.
25. (currently amended) The method of claim 1, 2, 3, 4, 5, 6, 7, 8, or 9, wherein G represents, independently for each occurrence, acyl, formyl, -C(O)OR, -C(O)NR₂, -S(O)₂R, -SO₃R, -S(O)₂NR₂, -C(NR)-R, -C(NOR)-R, or -C(NNR₂)-R.
26. (currently amended) The method of claim 1, 2, 3, 4, 5, 6, 7, 8, or 9, wherein G represents, independently for each occurrence, acyl, -C(O)OR, -C(NR)-R, -C(NOR)-R, or -C(NNR₂)-R.
27. (currently amended) The method of claim 1, 2, 3, 4, 5, 6, 7, 8, or 9, wherein G represents acyl.
28. (currently amended) The method of claim 1, 2, 3, 4, 5, 6, 7, 8, or 9, wherein the method is practiced between about 70 and 110 °C.
29. (currently amended) The method of claim 1, 2, 3, 4, 5, 6, 7, 8, or 9, wherein the method is practiced at about 100 °C.
30. (currently amended) The method of claim 1, 2, 3, 4, 5, 6, 7, 8, or 9, wherein the method is practiced at about 70 °C.
31. (currently amended) The method of claim 1, 2, 3, 4, 5, 6, 7, 8, or 9, wherein the method is practiced at about 25 °C.

32. **(currently amended)** The method of claim 1, ~~2~~, 3, 4, 5, ~~6, 7~~, 8, or 9, wherein the product has an ee of greater than or equal to 50%.

33. **(currently amended)** The method of claim 1, ~~2~~, 3, 4, 5, ~~6, 7~~, 8, or 9, wherein the product has an ee of greater than or equal to 70%.

34. **(currently amended)** The method of claim 1, ~~2~~, 3, 4, 5, ~~6, 7~~, 8, or 9, wherein the product has an ee of greater than or equal to 80%.

35. **(currently amended)** The method of claim 1, ~~2~~, 3, 4, 5, ~~6, 7~~, 8, or 9, wherein the product has an ee of greater than or equal to 90%.

Claims 36-70 **(canceled)**